

## A REVISED SYNOPSIS OF THE PINES 4: THE CHIHUAHUA PINE (*PINUS*, SECTION *LEIOPHYLLA*)

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### ABSTRACT

Another unique pine is *Pinus leiophylla* which constitutes by itself one section, section *Leiophylla* due to a combination of four characteristics: the strobiling time is in July (i.e., late for a southern pine species); 2) the species spends two years and a half to mature its fruits; 3) a dense coppice growth of fast growing shoots often emerge from cut trunks; 4) its geographic distribution is continental.

KEY WORDS: *Pinus*, Pinaceae, systematics

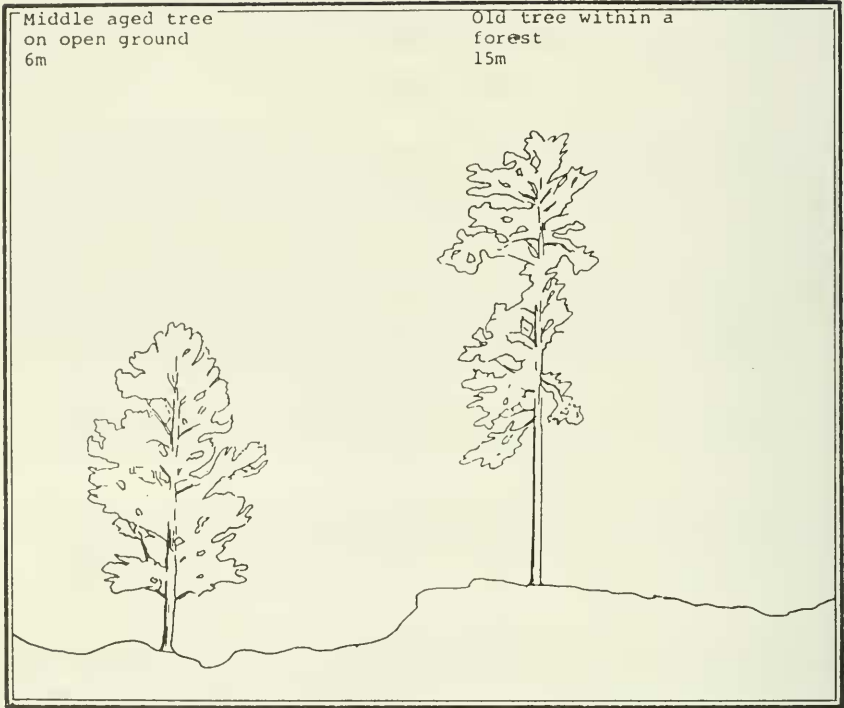
### INTRODUCTION

This short paper treats *Pinus leiophylla* Schiede & Deppe and complements a previous paper (Landry 1989) wherein were reported important features of the Parasol Pine (*Pinus pinea* L.), the other pine (in addition to *P. leiophylla*) which spends at least two years and a quarter to grow and mature its cones.

### SUBGENUS *PINEA*: PRACTICAL DIAGNOSTIC KEY TO THE SECTIONS, BASED ON CONE AND SEED CHARACTERS

Closed cones slightly fatter than eggs, applelike. Midcone seeds with very short, ineffective, caducous wing which stays stuck to the cone scale; said wing shorter than the seed body. .... section *Pinea*.

Closed cones narrower than eggs, rather conic. Midcone seeds with a long, effective, articulate wing, about 3 times longer than the seed body. ...  
..... section *Leiophylla*.



Outline of Pinus leiophylla. Left: after Kearney et al. (1942, p.63).  
Right: after Loock (1950, p.127).

The cones of *Pinus pinea* are often hard to find on the ground under the trees because they are picked up for their delicious seeds. I therefore furnish a second key based on the characters of the tree silhouette and the needles.

SUBGENUS *PINEA*: PRACTICAL SILHOUETTE AND NEEDLE KEY  
TO THE SAME SECTIONS

- Old trees with a dense parasol silhouette. Needles binate (by 2). . . . .  
. . . . . section *Pinea*
- Old trees with light looking cylindrical or conical silhouette. Needles binate  
(by 2) to quinate (by 5). . . . . section *Leiophylla*

FORMAL NAMES OF SECTION *LEIOPHYLLA* AND SUBSECTION  
*LEIOPHYLLAE* EMEND.

Following are citations of the first publications:

- Section *Leiophylla* Van der Burgh, Rev. Palaeobot. Palynol. 15:92. 1973.  
Comprises only *Pinus leiophylla* Schiede & Deppe, monotypic.
- Subsection *Leiophyllae* Loudon, Arb. Frut. Brit. 2273. 1838. Emend. Now  
comprises only *Pinus leiophylla* Schiede & Deppe, monotypic.

NOTE ON THE DENDROLOGY OF *PINUS LEIOPHYLLA*

There are two varieties of the Chihuahua Pine, keyed according to the authoritative observations of Loock (1950, p. 121 and 125). Here is a key to them:

- A stable number of needles per fascicle: 5. Cones dull, and yellowish brown  
when fresh. . . . . *Pinus leiophylla* var. *leiophylla*
- A variable number of needles per fascicle: 2 to 5, often 3. Cones slightly  
shining, and dark brown when fresh. *Pinus leiophylla* var. *chihuahuana*

COMMENTARY ON FOUR BEHAVIORAL "ACTIONS" OF *PINUS LEIOPHYLLA*

In addition to many clear (without overlapping) morphological differences between *Pinus leiophylla* and *P. pinea*, here are four major behavioral "actions" of *Pinus leiophylla* that differ from those of *Pinus pinea*:

1. The strobiling (*i.e.*, the production of the strobiles, wrongly called "flowers") occurs in July, while that of *Pinus pinea* occurs during May or June. Peattie (1980, p. 77) specifies that the strobiles, "unlike those of most other pines, do not appear until July." Such a date is exceptional for a pine species living south of latitude 35 degrees.
2. According to Loock (1950, p. 121 and 125) the cones of *Pinus leiophylla* "ripen from January onwards, retaining the seeds for some time," signifying that the total period of fruit gestation from the strobile stadium is two years and a half, compared to two years and a quarter for *Pinus pinea*. That is a record duration of fruit growth for the genus *Pinus* and perhaps for the plant kingdom. What kind of divine "light" did such a feat?
3. Shaw (1909, p. 14) reported that "when a tree is felled, the stump in a few years becomes completely concealed by the numerous shoots that grow from it." Such a phenomenon seems unique in the genus *Pinus*. Small sprouts may be seen growing sometimes on the living trunks of a few other pine species (*Pinus rigida* Mill., for example) but it is the dense regeneration from cut stumps that is marvelously spectacular. Stump sprouting constitutes an antideforestation factor of great importance. We know that the human being may tend to exploit the forests and leave them bare. With *Pinus leiophylla*, that psychological tendency could be partly counteracted. It is therefore recommended to create plantations of Chihuahua Pines on sites where the land is not otherwise used and where such a xerophilous species can thrive.
4. A glance at the precious map of Critchfield & Little (1966, p. 54) shows the continental distribution of *Pinus leiophylla* from Arizona to Oaxaca, mainly on the Sierra Madre Occidental. It is barred southeasterly by the low country of the Istmo de Tehuantepec. On the other face of the coin, *Pinus pinea* is very maritime.

## RECOGNITION

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